



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Michael H. Peronek, et al.
For : PLASTIC WATER BOTTLE
Serial No. : 10/680,510
Filing Date : October 7, 2003
Examiner : Tri M. Mai
Group Art Unit : 3727
Date of Last Action : August 10, 2005
Our Docket : FCIE 2 13320-1

REPLY BRIEF

Mail Stop Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

This is a Reply Brief in response to the examiner's Answer mailed January 11, 2006.

**I. OVERVIEW OF EXAMINER'S COMMENTS
OF APPELLANT'S APPEAL BRIEF**

The examiner indicated that Appellant included all the required information in the Appeal Brief.

The Examiner withdrew the rejection of several claims. As such, several issues in the Argument section of Appellant's Appeal Brief are now modified or have become moot. A summary of these changes is set forth below:

1. The First Issue - Claims 51, 53-58, and 60-65 are withdrawn from this issue by the

examiner. Claims 28-42, 52, 59, 74-84 continue to be rejected under 35 U.S.C. §112(2).

2. The Second Issue - This issue is now moot.
3. The Third Issue - This issue is now moot.
4. The Fourth Issue - Claims 77 and 78 are withdrawn from this issue by the examiner.

Claims 28-42, 51-65, 74-76 and 79-84 continue to be rejected under 35 U.S.C. §103(a) as being unpatentable over Collette 4,755,404 in view of either Pree D192,942 or Japanese Publication No. 6-247432.

5. The Fifth Issue - Claims 77 and 78 are withdrawn from this issue by the examiner.

Claims 28-37, 42, 51-60 and 74-76 continue to be rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Publication No. 61-93093 in view of either Pree D192,942 or Japanese Publication No. 6-247432. The examiner did not indicate that claim 65 was withdrawn from this rejection even though this claim is not part of the Appeal.

6. The Sixth Issue - Claims 38-41, 61-64, 82, 83 and 84 continue to be rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Publication No. 61-93093 in view of either Collette 4,755,404 or the admitted prior art.

The examiner set forth several arguments in the Examiner's Answer which did not appear in the Final Office Action. These new arguments are addressed in detail below.

II. OVERVIEW OF EXAMINER'S RESPONSE TO APPELLANTS' ARGUMENTS

The claims on appeal are directed to a flange on a bottle that performs two principal functions, namely 1) supports a bottle on a railing system during the filling and capping process, and 2) inhibits or prevents rotation of the bottle and limits damage to the base of the bottle during the capping process. None of the prior art of record discloses, teaches or suggests a flange that addresses these two functions as defined in the appealed claims.

Appellant maintains that the examiner's obviousness rejection of the claims is based on a mere identification of the elements of the appealed claims, the arbitrary selection of prior art which includes one or more of these identified elements, and the unsupported conclusion that there is motivation to combine these prior art patents to justify an obviousness rejection of the appealed claims. Appellant submits that this is an improper analysis of the claims under 35 U.S.C. §103.

A. THE FIRST ISSUE ON APPEAL

The examiner maintained the rejection of claims 28-42, 52, 59, 74-76 and 79-84 under 35 U.S.C. §112(2) on the basis that the language in the claims regarding a plurality of straight surfaces symmetrically oriented about the flange is inconsistent, thus indefinite. The examiner also stated that it was unclear about what line the flanges are symmetrically disposed, thus further causing the claims to be indefinite. As explained in detail below, the examiner has continued to apply a narrow definition to the word "symmetrically" which is unjustified in view of the ordinarily defined drawings and specification of Appellant's invention and the plain meaning of the word as set forth in dictionaries.

The examiner expanded the basis for the rejection of the claims in the Response to Argument on pages 7-8 of the Examiner's Answer. Specifically, the examiner asserted that an odd number of flanges and apexes would not result in a symmetrically oriented shape about the flange. The examiner further asserted that the specification failed to shed any light with respect to the symmetrical orientation of the flange. Appellant disagrees with both statements by the examiner.

The examiner asserted a meaning of "symmetrically" that is contrary to the use in the originally application and drawings. *Webster's Third New International Dictionary* (Merriam-Webster Inc. 1986) defines "symmetrically" as "in a symmetrical manner". *Webster's Third New International Dictionary* defines "symmetrical" as "having or involving symmetry". *Webster's*

Third New International Dictionary includes several definitions of “symmetry”. The first definition is a “*mutual relationship of parts (as in size, arrangement, or measurements).*” (emphasis added). The second definition is “correspondence in size, shape, and relative position of parts ... that are distributed about a center or axis. A copy of all three of these definitions is located on page 2317 of *Webster’s Third New International Dictionary* and is enclosed herein.

The examiner’s assertion of indefiniteness appears to center about one of several definitions of “symmetry”. The examiner’s rejection ignores the primary definition of “symmetry” being asserted by Appellant, namely, a “*mutual relationship of parts .*” Figures 1, 3, 6A, 6B, 7, 8A, and 8B illustrate flanges on a container having an odd number of straight sides and which are equally spaced about a central axis of the flange. As such, these odd numbered straight sides have a “*mutual*” relationship as to size and as to arrangement about the central axis of the flange. One term that could be used to describe this odd number of straight sides about the flange is that the straight sides have a “*rotational symmetry*” about the central axis of the flange. Irrespective of what term is used to describe the relationship of these straight sides on the flanges of Figures 1, 3, 6A, 6B, 7, 8A, and 8B, these sides are indeed “*symmetrically*” oriented about the flange.

The examiner also argued that the phrase “*straight surfaces symmetrically oriented about said non-circular anti-rotation flange*” is confusing since, according to the examiner, an odd number of flanges and apexes “would not result in a symmetrically oriented shape about the flange.” As established above, the examiner’s understanding of the definition of “*symmetrically*” is incorrect. The examiner’s rejection appears to be based on one narrow definition of “symmetry”. *Webster’s Third New International Dictionary* includes a definition of “symmetry” as “correspondence in size, shape, and relative position of parts that are on opposite sides of a dividing line or median plane.” This definition is not the primary definition of “symmetry”, but a more narrow definition of the

word. Appellant acknowledges that if this is the definition the examiner is using to interpret the scope of the claims, then the use of “symmetrically” in the claims would indeed be confusing. However, Appellant has never asserted that this narrow definition is proper. Appellant attempted to establish that the broader definition of symmetry is used in the claims; however, the examiner repeatedly dismissed Appellant’s arguments. Appellant will not repeat these arguments set forth in the Appeal Brief for purposes of brevity.

The examiner acknowledged that the originally filed specification includes the term “symmetrically” on page 8, line 11 to describe the orientation of a plurality of notches about the flange. It is noteworthy that the specification does not require that an even number of notches exist for there to be “symmetrically” oriented notches about the flange. Appellant submits that imposing the examiner’s narrow definition of “symmetry” to the language on page 8 of the specification would result in the specification being unclear since the specification did not limit the number of notches to an even numbered notches. Appellant notes that Figures 8C, 8D, and 8E disclose three separate embodiments of notches that are “symmetrically” oriented about the flange. In each embodiment, an even number of notches are disclosed; however, specification states that other numbers of notches can be used and still fall within the scope of the invention. (See page 18, lns. 1-22). An even number of notches is not required by the invention. The fact that the examiner’s narrow definition would create confusion or an impossibility with embodiments encompassing odd numbers of notches is further evidence that the examiner’s narrow definition of “symmetry” is not appropriate. The fact that the examiner’s narrow definition would create confusion or an impossibility with embodiments encompassing odd numbers of notches is further evidence that the examiner’s narrow definition of “symmetry” is not appropriate.

Appellant resubmits that the claim language relating to the straight surfaces and apexes being

symmetrically oriented about the non-circular anti-rotation flange is 1) supported by the originally filed drawings and specification and 2) not inconsistent language when describing the configuration of the non-circular anti-rotation flange. Appellant requests the Board to find that an odd number of straight surfaces about the peripheral edge of the flange can be "symmetrically" oriented about the flange and that the examiner's rejection of claims 28-42, 52, 59, 74-76 and 79-84 under 35 U.S.C. §112(2) is in error and should be reversed.

B. THE FOURTH ISSUE ON APPEAL

The examiner presented several new arguments regarding the rejected claims; however, the examiner did not address many of Appellant's arguments regarding the non-obviousness of the claims in view of the combined teachings of Pree, JP 432 or Akiyama with Collette. As a result, Appellant will not repeat the arguments for non-obviousness previously detailed in the Appeal Brief.

The examiner introduced a new argument in the Grounds for Rejection regarding the correlation between the number of apexes and the number of straight sides on the flange. This argument was again asserted in the Response to Argument section. The examiner also introduced several other new arguments in the Response to Argument section. Specifically, the examiner stated a brief justification for combining the teachings of Pree, JP 432 or Akiyama with Collette. The examiner also introduced two arguments which appear to be directed to a new basis for rejecting the claims under 35 U.S.C. §112(2), rather than new arguments supporting the rejection of the claims under 35 U.S.C. §103. The examiner further set forth an argument asserting that all polygons are equivalent. Appellant addresses each of this new arguments below.

1. Number of Apexes Not Obvious From Prior Art

The examiner asserted that any flange having an odd number of straight surfaces would have an odd number of apexes. Appellant disagrees.

The apexes are defined in the claims as being formed by ends of two of substantially straight surfaces that are positioned adjacent to one another. Such apexes are illustrated in Figures 1, 3, 5, 6A, 6B, 7, 8A and 8B. However, Appellant submits that an odd number of straight surfaces would not always form an odd number of apexes. As illustrated in Figures 8C-8E, the flanges do not include any apexes that would fall within the definition of apex as defined in the claims. It is not inconceivable to form flanges similar to those illustrated in Figures 8C-8E, but having an odd number of notches formed from an odd number of substantially straight sides. These types of flanges would have an odd number of straight sides on the peripheral edge of the flange, but the flange would not include any apexes. Consequently, the examiner's assertion regarding direct **correction** between the number of apexes and number of straight sides is in error.

It is also noteworthy that not all apexes will be diametrically opposed from a center of at least one of substantially straight surface on the flange. This limitation is defined in several claims on appeal. If the straight sides on the flange are not all the same length, then one or all of the apexes that are formed on a flange will not be diametrically opposed from a center of at least one substantially straight surface on the flange.

Appellant resubmits that the claims on appeal are not obvious in view of the teachings of Pree, JP 432 or Akiyama in combination with Collette.

2. No Motivation To Combine The Cited Art

The examiner asserted that there was motivation to combine the teachings of Pree, JP 432 or Akiyama with Collette since it is well known in the art to use a flange with a non-circular structure for gripping when opening a treaded cap on the container or for holding the container during manufacturing. Appellant disagrees.

The examiner has not identified any art of record that establishes that a non-circular flange

is used by manufacturers to limit the rotation of a container when applying a cap at high torque onto a container. The only teaching regarding this concept is from Appellant's own invention. The examiner's assertion that it is well known to use a non-circular flange during the filling and capping process of the container is also not supported by the art of record. Indeed, the background of Appellant's invention only discloses the use of circular-shaped flanges that are used on rail systems to support the container during the filling and capping process. (Page 8, ln. 14 - Page 9, ln.7).

Appellant also questions the relevancy of the examiner's assertion that non-circular flanges are used by individuals to open containers, thus one skilled in art would be motivated to combine the teachings of Pree, JP 432 or Akiyama in combination with Collette to support a rejection of the claims on appeal. Two of the principal problems solved by Appellant's invention are 1) design a flange that can effectively support a bottle on a railing system during the filling and capping process, and 2) design a flange that can be used to inhibit or prevent rotation of the bottle and to limit damage to the base of the bottle during the capping process. None of the prior art of record discloses, teaches or suggests a resolution to these two problems. The industry has adopted as the standard, circular flanges to support bottles on the railing systems and specially shaped bases, or bodies, of the bottle for use in preventing rotation of the bottle during the capping process as illustrated in Collette. The examiner has not established that the teachings contained in Pree, JP 432 or Akiyama have any relevancy to the two problems addressed by Appellant's invention.

The examiner has also never indicated why one skilled in the art would be motivated to modify the flange of Collette. The circular flange on the bottle disclosed in Collette can provide excellent support for the bottle during the filling and capping process as disclosed in the prior art. Indeed, most commercially available containers include a circular flange. The only problem with a circular flange is that such a circular flange cannot be easily secured at the edges to inhibit or

prevent rotation of the bottle during the capping process. (Page 7, lines 4-15). The bodies of the three containers disclosed in Pree, JP 432 or Akiyama are not circular, thus the body of the container can be easily engaged to prevent rotation of the container during a capping process. As such, one skilled in the art could deduce that the use of a circular flange with a non-circular body would achieve a similar end result as the bottle disclosed in the present invention. However, Pree, JP 432, Akiyama and Collette do not indicate that any problem with bottle rotation exists. As such, one skilled in the art would not be motivated to use Pree, JP 432 or Akiyama in combination with Collette to solve any rotation problem associated with a flange. Appellant also notes that all the flanges of the containers disclosed in Pree, JP 432 or Akiyama include an even number of straight sides. An even number of straight sides can result in the flange potentially disengaging from a railing system during the bottling process. Appellant disclosed that an odd number of straight sides on the flange overcame this problem. (Page 8, ln. 14 - Page 9, ln. 7). Since Pree, JP 432 and Akiyama only disclose flange configurations that have an even number of straight sides, Appellant further submits that there would be no motivation to modify the circular flange of Collette to form a flange that could result in an inferior product, namely a container that could disengage from a railing system during a bottling process.

Appellant can only conclude that the examiner is merely identifying all of the elements of the appealed claims, arbitrarily selecting prior art that includes one or more of these elements, and then summarily stating that there is motivation to combine these prior art patents to support a rejection of the appealed claims. Such an analysis cannot be used to support a *prima facie* obviousness rejection under 35 U.S.C. §103.

Appellant also submits that it is very troubling that the examiner has continued to maintain a rejection of the claims, yet has never located a prior art reference that includes a flange with an odd

number of straight surfaces on the peripheral edge of the flange. The fact that there must be hundreds or even thousands, of utility and design patents in the United States and throughout the world, and that the examiner has not located a single reference that discloses, teaches or suggests a flange with an odd number of straight surfaces on the peripheral edge of the flange provides further evidence that it is not obvious to manufacture a container with a flange as defined in the claims on appeal.

3. Misinterpretation Of The “At Least Partially Formed Of” Limitation

The examiner asserted that the limitation in the claims regarding the phrase “at least partially formed of a plurality of substantially straight surfaces totaling an odd number” does not include other elements of the flange such as apexes. Appellant disagrees. The term “at least” is an open ended limitation, not a closed ended limitation as asserted by the examiner. Indeed, a reading of claim 74 in conjunction with claims 76 and 81 outright refutes the examiner’s interpretation of the term “at least”. Appellant can find no support to the examiner’s assertion on page 8, line 10 of Appellant’s brief. This section of the brief was discussing the difference between curved surfaces and straight surfaces. The interpretation of “at least” is not mentioned in this section of the Appeal Brief.

4. Total Number of Straight Surfaces Means “Total Number”

The examiner argued that the term “total” does not mean “total”, but really means something else. Appellant does not understand the rationale or logic of the examiner’s position. The examiner has not identified any dictionary definition or any passage in Appellant’s specification which supports the examiner’s definition of “total” with regard to the straight surfaces on the outer peripheral edge of the flange. Appellant submits that it is an error for the examiner to make up definitions of words.

Appellant can only surmise the examiner is erroneously associating the words “at least” with the term “total”. Such an analysis by the examiner makes no sense. The words “at least” are used to state that the outer peripheral edge of the flange is at least partially formed of straight surfaces. As illustrated in Figures 6A and 6B, the peripheral edge of the flange includes seven straight surfaces and seven curved apexes. As such, the outer peripheral edge of the flange is at least partially formed of straight surfaces, and the total number of straight surfaces is an odd number.

The examiner also argued that withdrawn claims 45 and 47 “must” read on Figure 8C. As such, the limitation in claim 28 relating to “total an odd number” must somehow include an even number. Appellant disagrees. The original claims in the application were worded to be broad enough to encompass all of the embodiments in the originally filed figures; however, during the course of prosecution of the claims, the claims have been limited in scope by various amendments. Currently, claim 28 is not broad enough to encompass the flange configuration of Figures 8C-8E. Appellant submits that the examiner’s analysis is without merit.

5. All Polygonal Structures are Not Equivalent

The examiner asserted that all polygons are equivalent and that the specification does not disclose why an odd numbered polygon is better than an even numbered polygon or a circular polygon. Appellant disagrees.

The examiner argued that page 8, line 3 of the specification teaches that all polygons are equivalent. The examiner apparently did not read the section in the specification on page 7, lines 4-15 regarding the disadvantages of bottles having circular flanges, and the section in the specification on page 8, line 14 through page 9, line 7 and page 17, lines 13-19 regarding the advantage of using an odd number of straight surfaces on the peripheral edge of the flange.

C. THE FIFTH ISSUE ON APPEAL

The examiner again presented several new arguments regarding the rejected claims; however, many of Appellant's arguments regarding the non-obviousness of the claims in view of the combined teachings Pree or JP 432 with JP 093 were not challenged by the examiner. Consequently, Appellant will not repeat the arguments for non-obviousness previously detailed in the Appeal Brief.

The examiner introduced a new argument in the Grounds for Rejection regarding the correlation between the number of apexes and the number of straight sides on the flange. This argument was again asserted in the Response to Argument section. The examiner also introduced several new arguments in the Response to Argument section. Specifically, the examiner summarily stated that one skilled in the art would be taught by Pree or JP 432 to modify the flange disclosed in JP 093 to form a flange having an odd number of straight sides. The examiner also interpreted the "at least partially" limitation in the claims. The examiner further briefly stated that there was motivation to combine the teachings of Pree or JP 432 with JP 093 to support a rejection of the claims on appeal. Appellant addresses each of these new arguments below.

1. Odd Number of Sides Not Obvious From Prior Art

The examiner asserted that it was obvious to provide the flange disclosed in JP 093 with an odd number of sides in view of the teachings of Pree or JP 432. Appellant disagrees.

JP 093, Pree and JP 432 do not disclose, teach or suggest a flange on a container having an odd number of straight sides. The examiner's assertion that these three references specifically teach a heptagonal shaped flange is also without merit. Appellant has repeatedly argued that no reference of record discloses a bottle or container having a flange with a plurality of straight sides totaling an odd number. In response to Appellant's arguments, the examiner has summarily concluded that it would be obvious to form a flange having an odd number of straight sides; however, the examiner has never presented any prior art during the prosecution of the invention that provides supports for

this position. Appellant submits that the examiner is basing the rejection of the claims on a) the teachings of Appellant's own invention, and/or b) an opinion by the examiner that there is no patentable invention irrespective of the teachings of the prior art of record.

The examiner also asserted that not only is an odd numbered straight sided flange obvious from the teachings of JP 093 and Pree or JP 093 and JP 432, but a heptagonal shaped flange was also obvious from the teaching of these references. Appellant disagrees. None of the references disclose a bottle or container having a flange with seven straight sides. Indeed, as previously state, none of the bottles or containers have a flange with an odd number of straight sides.

Appellant resubmits that the claims on appeal are not obvious in view of the teachings of JP 093 and Pree or JP 093 and JP 432.

2. Number of Apexes Not Obvious From Prior Art

The examiner also asserted that any flange having an odd number of straight surfaces would have an odd number of apexes. As stated above, the apexes are defined in the claims as being formed by ends of two of substantially straight surfaces that are positioned adjacent to one another. Such apexes are illustrated in Figures 1, 3, 5, 6A, 6B, 7, 8A and 8B. As also described above, an odd number of straight surfaces would not always form an odd number of apexes. Therefore, the examiner's assertion regarding direct correction between the number of apexes and number of straight sides is in error.

Appellant resubmits that the claims on appeal are not obvious in view of the teachings of JP 093 and Pree or JP 093 and JP 432.

3. Interpretation Of The "At Least Partially Formed Of" Limitation

The examiner asserted that the limitation in the claims regarding the phrase "at least partially formed of a plurality of substantially straight surfaces totaling an odd number" can be interpreted

as only requiring at least three substantially straight sides on the flange. Appellant agrees that the independent claims are broad enough to include a flange on a bottle having only three straight sides on the peripheral edge of the flange. However, it is unclear what point the examiner was attempting to make with regard to this statement.

4. No Motivation To Combine The Cited Art

The examiner asserted that there was motivation to combine the teachings of Pree or JP 432 with JP 093 since it is well known in the art to use a flange with a non-circular structure for gripping when opening a treaded cap on the container or for holding the container during manufacturing. Appellant disagrees.

As stated above, the examiner has not identified any art of record that establishes that a non-circular flange is used by manufacturers to limit the rotation of a container when applying a cap at high torque onto a container. The only teaching regarding this concept is from Appellant's own invention. The examiner's assertion that it is well known to use a non-circular flange during the filling and capping process of the container is also not supported by the art of record as previously set forth above. Appellant resubmits that the examiner is merely identifying all of the elements of the appealed claims, arbitrarily selecting prior art that includes one or more of these elements, and then summarily stating that there is motivation to combine these prior art patents to support a rejection of the appealed claims. Such an analysis cannot be used to support a *prima facie* obviousness rejection under 35 U.S.C. §103.

D. THE SIXTH ISSUE

Appellant resubmits that since independent 28, 51 and 74 are not obvious in view of the cited prior art for at least the reason set forth in the Appeal Brief and this Reply Brief, dependent claims 38-41, 61-64, 82, 83 and 84 which depend on independent claims 28, 51 and 74 respectively, are not

obvious in view of JP 043 in combination with either Collette or the APA.

F. SUMMARY

In conclusion, the claims on appeal pertain to a novel molded plastic container. Appellant submits that for at least the reasons set forth above and in the Appeal Brief, all of the pending claims are in proper form pursuant to 35 U.S.C. §112 and none of the claims on appeal obvious in view of the cited art of record. Appellant respectfully requests that the rejection of the claims be withdrawn and that such claims be indicated as allowable.

Respectfully submitted,
~~FAY, SHARPE, FAGAN, MINNICH & MCKEE~~

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premaxillaries well developed and the pectoral arch joined to or near the skull.

sym-brach-oid \sim'brak'oid\ adj [NL *Symbranchus* (syn. of *Symbiontis*, type genus of the *Symbranchidae*, fr. *syn-* + *Brachia* gills) — *E* — *before* at BRANCHIA] : resembling or related to the *Symbranchidae*

sym-brach-itus \sim'brak'stus\ n, pl. *sym-mi-ly* \-məlē'\ [NL, fr. *syn-* + *melus*] : SIRENOMELUS

sym-met-al-ic \sim'met'ik\ adj [*sym-* + *-metallic*]

: of or relating to *metallism* (*< coins*)

sym-met-al-ism \sim'met'izm\ n-s [syn. + *-metallism*]

(as in *metallism*) : a system of coinage in which the unit

of currency consists of a particular weight of an amalgam of

two or more metals (as gold and silver)

sym-met-ri-cal \sim'met'rekəl\ adj [*sym-* + *-metrical*]

: of or relating to *symmetry* (*< coins*)

sym-met-ri-cal \sim'met'rekəl\ adj [*sym-* + *-metrical*]

: having or involving symmetry : exhibiting correspondence

in size and shape of parts — *BALANCED* RELATION (the human

body is *symmetrical* in its organization, *garden* (*a group*)

a : having corresponding parts when connecting lines are bisected by a given point or perpendicularly bisected by a

given line or plane — used of geometrical figures *3* *a* : being

of such nature that the terms may be interchanged without

altering the value, character, or truth — used esp. of mathematical relations, functions, and equations *<= f(a+b)* is *~* with respect to *a* and *b* but not generally with respect to *a* and *c*

b : **COMMENSURABLE** *4* *a* of a shoot or other plant part

: capable of division by a longitudinal plane into similar halves — compare ACTINOMORPHIC, ZYOMORPHIC *b* of a flower : having the same number of members in each whorl of floral leaves — compare REGULAR *2c* *b* : affecting corresponding parts simultaneously and similarly (*~ gangrene of the legs*) *6* : exhibiting symmetry in the structural formula; esp. : relating to deviations in which groups are substituted symmetrically in the molecule (*e.g.* dichloro-ethylene *CICH₂Cl₂*) *~* or *1,3,5-trinitrobenzene*

sym-met-ri-cal-phenyl-urea n : CARBANILIDE

sym-met-ric-lens n : a simple or compound lens whose optical properties are unaltered when the axis is rotated through 180 degrees

sym-met-ri-cal-ly \-răk'əlē\, -răk', -lē\ adv [symmetry + *-ically*] (as in *geometrically*) : in a symmetrical manner (*placed windows*) (highly cultivated and *~* developed persons —C.W.Eliot)

sym-met-ri-cal-nos n-s [the quality or state of being symmetrical] — SYMMETRY

sym-me-tri-za-tion \sim'mē-trēzāshən\ n-s [symmetrize + *-ation*] : the action of making symmetrical

sym-me-tri-zed \sim'mē-trēzid\ adj [ED-INGO/S] [symmetry + *-ized*] : make symmetrical; reduce to symmetry

sym-me-tri-phobia \sim'mē-trēfō'biə\ n [NL, fr. E *symmetry* + NL *-o-* + *phobia*] : a characteristic asymmetry (as in ancient Egyptian architecture and in Japanese design) implying an aversion to symmetry

sym-me-tri-ty \sim'mē-trē\, -tē\ n-s [L *symmetria*, fr. Gk. *symmetria*, from *sym-* + *metron* *commeasurable, proportion, symmetry*] : *symmetries* commensurable, suitable, symmetrical (fr. *syn-* + *metron measure*) + *-a-y* — more at MEASURE

1 a obs : mutual relationship of parts (as in size, arrangement, or measurements) ; PROPORTION *b* : due or balanced proportions : beauty of form or arrangement arising from balanced proportions (with order, *~, and taste unblest* —Robert Burns) *2* : correspondence in size, shape, and relative position of parts that are on opposite sides of a dividing line or median plane or that are distributed about a center or axis of symmetry or external form (as in a body, a design, or a group) marked by bilateral conformity or geometrical regularity

BILATERAL SYMMETRY, RADIAL SYMMETRY *3* : the property of being symmetrical *4* : the property of a crystal of having two or more directions that are alike in physical and crystallographic respects because of identity of atomic structure in the directions concerned or mirror-image relations along such directions

sym-mi-ctic \sim'mēktik\ adj [modif. of Gk *symmekton*, *sym-* + *mekton* mixed together, fr. *symmekynhai*, *symmekynhai* to mix together, fr. *syn-* + *megynhai*, *mignyhai* to mix — more at MIX] : composed of material that has not been segregated into separate layers of fine and coarse particles (*~ clay* ; *~ varnish*)

sym-pa-the-to-mize \sim'pə-thētik\ n-s [perform a sympathetic operation] : to perform a sympathectomy on

sym-pa-the-to-my \sim'pə-thētē\ n-s [ISV *sympath-* (fr. *sympathetic* + *-ectomy*)] : the surgical interruption (as by resection of a ganglion or plexus) of sympathetic nerve pathways

sym-pa-the-tic \sim'pə-thētik\, -tik\, -tik\ adj [NL *sympatheticus*, fr. Gk *sympathētikos* sympathy + *-tikos* (as in *pathētikos*, pathetic)] *1* : existing or operating through a real or assumed affinity, interdependence, or mutual association in which the condition of one thing influences sometimes in an occult way that of separate unrelated things *2* hair and nails are supposed by primitive man to remain in a ~ relation with their original owner —J.G. Frazer) (*as the exhalation of the dead person's cheftiness* —Nathaniel Hawthorne) *2* *a* of such an assumed character that coexistence, accord, or association is feasible or satisfying : not discordant or antagonistic (antipathetic to the laws of community living, but *~* to the law of survival —Agnes N. Keith) (*~ to slum-clearance programs*) *b* : appropriate to one's mood, inclinations, or disposition : having qualities leading to kindly acceptance, gratification, appreciation, or pleasurable association (*sneekness was not a quality that she found ~* —Helen Howe) *found a ~ medium in wood engraving —Herbert Read) *c* : marked by kindly or pleased approbation (in general the treatment of the subject is *~* rather than hostile —W.L.Sperry) *3* : given to, marked by, or arising from sympathy, compassion, friendly feelings, and sensitivity (*she's *sensitive* when you're cold and critical instead of ~* —Nathaniel Hawthorne (*~ gesture*) *4* : favorably inclined : showing a disposition or predilection in harmony ; APPROVING, FAVORING (those more *~* to your ways or views —M.R.Cohen) (*not ~ to the idea of a sales tax*) *5* : showing empathy : exhibiting ready comprehension of others' mental states : led by disposition or intuition to a warm friendly appreciative interest in others (though some considered her arrogant and forbidding, I found her personality ~ —Edmund Wilson) *6* *a* : of or relating to the sympathetic nervous system *b* : mediated by or acting on the sympathetic nerves *7* : relating to musical tones produced by means of sympathetic vibration (as from a resonator or resonance cavity) (*~ tone*) or so tuned as to sound by sympathetic vibration with another by being struck, plucked, or bowed (*string*) *SYN* see CONSONANT, TENDER SYMPATHETIC *8* n-s [a sympathetic structure, esp. : SYMPATHETIC NERVOUS SYSTEM]*

sym-pa-the-tic-al \sim'pə-thētik'əl\ adj [NL *sympatheticus* + E *-al* /archaic] : SYMPATHETIC

sym-pa-the-tic-al-ly \sim'pə-thētik'əlē\, -lik', -lē\ adv [sympathetic + *-ly*] : in a sympathetic manner or mood ; by reason of sympathy *1* in a sympathetic manner or mood ; by reason of sympathy *2* : through counteraction, consonance, or interdependence (*write ~*) (the crisis must ~ affect all nations) (*the characters are brilliantly observed but not ~ understood* —M.R.Riley)

sym-pathetic chain n : either of the ganglionated longitudinal cords of the sympathetic nervous system

sym-pathetic clock n : a clock synchronized from a master clock

sym-pathetic ink n : SECRET INK

sym-pathetic magic n : magic based on the assumption that

a person or thing can be supernaturally affected through its name or an object (as a nail paring, image, or dancer) representing it ; CONTAGIOUS MAGIC — compare IMITATIVE MAGIC

sym-pathetic nerve n : a nerve of the sympathetic nervous system

sym-pathetic nervous system n *1* **archicle** : AUTONOMIC NERVOUS SYSTEM *2* : the part of the autonomic nervous system that contains chiefly adrenergic fibers and tends to depress secretion, decrease the tone and contractility of smooth muscle, and cause the contraction of blood vessels

passing through delicate white rami communicantes to ganglia located in a pair of ganglionated cords situated one on each side of the vertebral column or to more peripheral ganglia or ganglionated plexuses and postganglionic fibers passing through gray rami communicantes to spinal nerves with which they are connected to various end organs — compare PARASYMPATHETIC, NERVOUS SYSTEM

sym-pa-thet-ic-ness n-s [the quality of being sympathetic

SYMPATHETIC, COMB FORM [sympathetic (nervous system)] *1* : sympathetic (sympathetic/comonic) *2* : sympathetic and sympathetic (sympathetic/adrenal) *3* : sympathetic and sympathetic (co-adrenalin) \sim'pə-thētik'ədral\ adj [sympathetic + adrenal] : of, relating to, or made up of sympathetic nervous and adrenal elements (*~ system*)

sym-pa-thet-i-co-lytic \sim'pə-thētik'əlītik\ adj [sympathetic + *-lytic*] : SYMPATHOLYTIC

sym-pa-thet-i-co-mimetic \sim'pə-thētik'əmīmētik\ adj [sympathetic + mimetic] : SYMPATHOMIMETIC

sym-pa-thet-i-co-toni-ta \sim'pə-thētik'ətōnētik\ adj [sympathetic + *-tonia*] : SYMPATHICOTONIA — SYMPATHETICOTONIA

sym-pa-thet-i-co-toni-til \sim'pə-thētik'ətōnētēl\ adj [sympathetic + *-tilia*] : SYMPATHETICOTONIA

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētētētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētētētētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētētētētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY

sym-pa-thet-i-co-toni-ti \sim'pə-thētik'ətōnētētētētētētētik\ adj [sympathetic + *-tomy*] : SYMPATHETICOTONY